



BAISHIDENG PUBLISHING GROUP INC

8226 Regency Drive, Pleasanton, CA 94588, USA

Telephone: +1-925-223-8242

Fax: +1-925-223-8243

E-mail: bpgoffice@wjgnet.com

http://www.wjgnet.com

ESPS PEER REVIEW REPORT

Name of journal: World Journal of Stem Cells

ESPS manuscript NO: 12611

Title: Synthetic Substrates: A Leap towards Clinical Applicability of Stem Cells

Reviewer code: 02446219

Science editor: Xue-Mei Gong

Date sent for review: 2014-07-18 17:19

Date reviewed: 2014-09-24 04:02

CLASSIFICATION	LANGUAGE EVALUATION	RECOMMENDATION	CONCLUSION
<input type="checkbox"/> Grade A: Excellent	<input checked="" type="checkbox"/> Grade A: Priority publishing	Google Search:	<input type="checkbox"/> Accept
<input type="checkbox"/> Grade B: Very good	<input type="checkbox"/> Grade B: Minor language polishing	<input type="checkbox"/> Existing	<input checked="" type="checkbox"/> High priority for publication
<input checked="" type="checkbox"/> Grade C: Good	<input type="checkbox"/> Grade C: A great deal of language polishing	<input type="checkbox"/> No records	<input type="checkbox"/> Rejection
<input type="checkbox"/> Grade D: Fair	<input type="checkbox"/> Grade D: Rejected	BPG Search:	<input type="checkbox"/> Minor revision
<input type="checkbox"/> Grade E: Poor		<input type="checkbox"/> Existing	<input type="checkbox"/> Major revision
		<input type="checkbox"/> No records	

COMMENTS TO AUTHORS

In this review article, the author has summarized the roles of substrates in maintenance and differentiation of human pluripotent stem cells, and their potential for clinical practice. This is a very well-written review. It is very informative to readers working in the field, and very instructive to readers working outside of the field. At the beginning of the fifth page there is a typing error that should be corrected.



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ESPS PEER REVIEW REPORT

Name of journal: World Journal of Stem Cells

ESPS manuscript NO: 12611

Title: Synthetic Substrates: A Leap towards Clinical Applicability of Stem Cells

Reviewer code: 01237968

Science editor: Xue-Mei Gong

Date sent for review: 2014-07-18 17:19

Date reviewed: 2014-09-17 08:45

CLASSIFICATION	LANGUAGE EVALUATION	RECOMMENDATION	CONCLUSION
<input type="checkbox"/> Grade A: Excellent	<input checked="" type="checkbox"/> Grade A: Priority publishing	Google Search:	<input checked="" type="checkbox"/> Accept
<input type="checkbox"/> Grade B: Very good	<input type="checkbox"/> Grade B: Minor language polishing	<input type="checkbox"/> Existing	<input type="checkbox"/> High priority for publication
<input checked="" type="checkbox"/> Grade C: Good	<input type="checkbox"/> Grade C: A great deal of language polishing	<input type="checkbox"/> No records	<input type="checkbox"/> Rejection
<input type="checkbox"/> Grade D: Fair	<input type="checkbox"/> Grade D: Rejected	BPG Search:	<input type="checkbox"/> Minor revision
<input type="checkbox"/> Grade E: Poor		<input type="checkbox"/> Existing	<input type="checkbox"/> Major revision
		<input type="checkbox"/> No records	

COMMENTS TO AUTHORS

This review manuscript comprehensively summarized culture methods of human pluripotential stem cells, focusing on characteristics and benefits of various synthetic substrates, which may be informative for researchers of the field. Because the authors described many kinds of substrates, tables concisely summarize characteristics of each substrate should be valuable for readers.

ESPS PEER REVIEW REPORT

Name of journal: World Journal of Stem Cells

ESPS manuscript NO: 12611

Title: Synthetic Substrates: A Leap towards Clinical Applicability of Stem Cells

Reviewer code: 02518970

Science editor: Xue-Mei Gong

Date sent for review: 2014-07-18 17:19

Date reviewed: 2014-09-28 01:44

CLASSIFICATION	LANGUAGE EVALUATION	RECOMMENDATION	CONCLUSION
<input type="checkbox"/> Grade A: Excellent	<input type="checkbox"/> Grade A: Priority publishing	Google Search:	<input type="checkbox"/> Accept
<input type="checkbox"/> Grade B: Very good	<input checked="" type="checkbox"/> Grade B: Minor language polishing	<input type="checkbox"/> Existing	<input type="checkbox"/> High priority for publication
<input type="checkbox"/> Grade C: Good	<input type="checkbox"/> Grade C: A great deal of language polishing	<input type="checkbox"/> No records	<input type="checkbox"/> Rejection
<input checked="" type="checkbox"/> Grade D: Fair	<input type="checkbox"/> Grade D: Rejected	BPG Search:	<input checked="" type="checkbox"/> Minor revision
<input type="checkbox"/> Grade E: Poor		<input type="checkbox"/> Existing	<input type="checkbox"/> Major revision
		<input type="checkbox"/> No records	

COMMENTS TO AUTHORS

In this manuscript, Enam & Jin listed many examples of extracellular matrix components and synthetic substrates that have been used for culturing human pluripotent stem cells. This is a very interesting topic that was well addressed by the authors. Major modifications: 1) The authors should provide more insights about all these data that were reviewed. 2) Tables that summarize the main characteristics (pro and cons) of the substrates could improve the manuscript. Minor comments: 1) All the abbreviations should be defined at first mention (example: rhLM) 2) There are at least three sentences that should be reworded: "Further, ROCK inhibitor Y-27632 is often required in hESCs grown on some recombinant protein substrates it is not required for LM-E8 substrates." ... "E-cadherins have also been linked with matrix rigidity where rigid substrates co-expressed E-cadherins and Oct4+ hESCs while large hESC aggregates on softer substrates showed an increased tendency to differentiate." ... and "However, PMVE-alt-MA (1.25 × 10⁶ Da) and PAA (4.5 × 10⁵ Da) generated greatest hPSCs proliferation rates at discrete molecular weights without a linear dependence." 3) Synthemax substrate should be defined.



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http://www.wjgnet.com

ESPS PEER REVIEW REPORT

Name of journal: World Journal of Stem Cells

ESPS manuscript NO: 12611

Title: Synthetic Substrates: A Leap towards Clinical Applicability of Stem Cells

Reviewer code: 00609434

Science editor: Xue-Mei Gong

Date sent for review: 2014-07-18 17:19

Date reviewed: 2014-09-29 19:23

CLASSIFICATION	LANGUAGE EVALUATION	RECOMMENDATION	CONCLUSION
<input type="checkbox"/> Grade A: Excellent	<input type="checkbox"/> Grade A: Priority publishing	Google Search:	<input checked="" type="checkbox"/> Accept
<input checked="" type="checkbox"/> Grade B: Very good	<input checked="" type="checkbox"/> Grade B: Minor language polishing	<input type="checkbox"/> Existing	<input type="checkbox"/> High priority for publication
<input type="checkbox"/> Grade C: Good	<input type="checkbox"/> Grade C: A great deal of language polishing	<input type="checkbox"/> No records	<input type="checkbox"/> Rejection
<input type="checkbox"/> Grade D: Fair	<input type="checkbox"/> Grade D: Rejected	BPG Search:	<input type="checkbox"/> Minor revision
<input type="checkbox"/> Grade E: Poor		<input type="checkbox"/> Existing	<input type="checkbox"/> Major revision
		<input type="checkbox"/> No records	

COMMENTS TO AUTHORS

In this manuscript, Enam and coworker describe the numerous extracellular matrix proteins (ECMPs), peptides, polymers, and hydrogels that have been designed and used for laboratory stem cell cultivation and discuss the benefits and shortcomings of their use in regenerative medicine basic research or in clinical settings. The review analyses thoroughly the current literature summarizing the main findings in this field of applied research. I think that this manuscript is of high interest in its field because it reviews the literature of a very important and practical topic in stem cell research giving important hints both for people who approach stem cell research for the first time as well as for experts in this field. I just recommend a careful check of grammatical errors and the definition of all the acronyms used throughout the manuscript.



ESPS PEER REVIEW REPORT

Name of journal: World Journal of Stem Cells

ESPS manuscript NO: 12611

Title: Synthetic Substrates: A Leap towards Clinical Applicability of Stem Cells

Reviewer code: 00203307

Science editor: Xue-Mei Gong

Date sent for review: 2014-07-18 17:19

Date reviewed: 2014-09-30 18:52

CLASSIFICATION	LANGUAGE EVALUATION	RECOMMENDATION	CONCLUSION
<input type="checkbox"/> Grade A: Excellent	<input type="checkbox"/> Grade A: Priority publishing	Google Search:	<input type="checkbox"/> Accept
<input checked="" type="checkbox"/> Grade B: Very good	<input checked="" type="checkbox"/> Grade B: Minor language polishing	<input type="checkbox"/> Existing	<input type="checkbox"/> High priority for publication
<input type="checkbox"/> Grade C: Good	<input type="checkbox"/> Grade C: A great deal of language polishing	<input type="checkbox"/> No records	<input type="checkbox"/> Rejection
<input type="checkbox"/> Grade D: Fair	<input type="checkbox"/> Grade D: Rejected	BPG Search:	<input checked="" type="checkbox"/> Minor revision
<input type="checkbox"/> Grade E: Poor		<input type="checkbox"/> Existing	<input type="checkbox"/> Major revision
		<input type="checkbox"/> No records	

COMMENTS TO AUTHORS

Comments to authors The authors review substrates for culture of stem cells, in particular human pluripotent stem cells. This is an interesting review with potential to be of broad interest to stem cell researchers. There are however a few issues that the authors should address: (1) The title “Synthetic substrates: A leap towards clinical applicability of stem cells” does not accurately reflect the content. On one hand, the conclusion that synthetic substrates are preferable emphasised by the title is not original. But the review covers more than just the advantage of synthetic substrates for clinical application of stem cells. (2) While the issue of clinical applicability is discussed, it does not come across strongly and there is no clear opinion on which substrates are best for clinical application under which circumstances. The review could be greatly improved by making clear cut recommendations on clinical applicability of the various substrates discussed in the conclusions. (3) Matrigel is mentioned but primary in comparison to specific extracellular matrix components. The composition and use of Matrigel itself as a substrate is not discussed adequately. (4) The second sentence in the abstract is confusing and unclear. (5) In several instances the authors introduce a reference by the author’s name (e.g. “Miyazaki et al.” p. 6) but only cite the numbered reference in the preceding or next sentence. This is confusing. It would be better to cite the numbered reference in the same sentence. (6) There are a number of minor grammatical errors throughout, in particular missing commas separating clauses starting with “which”.